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Practice Locations of Family Practice Residency Graduates

Gordon Schmittling, Ross R. Black, M.D., Thomas L. Stern, M.D., and Claudene Clinton

Abstract—The purpose of this study was to examine the practice location patterns of 1970–1978 graduates of family practice residency programs. Comparisons were made between the number of graduates practicing in a region in 1979 with the number of all graduates during 1970–1978 from family practice residency programs in that region and with the number of all graduates from medical schools in that region who eventually completed family practice residencies elsewhere. The Middle Atlantic and West North Central regions showed marked decreases, while the Mountain, Pacific, and New England regions showed increases. The majority practiced more than 100 miles from their residency program. Most respondents practicing in a nonmetropolitan area moved outside of a 100-mile radius from their residencies. Most respondents practicing in a metropolitan area practiced within the 100-mile radius. Physicians were likely to be practicing in a community similar to their backgrounds.

The inaccessibility of health care in nonurban and inner-city areas was recognized as a major health care problem in the United States two decades ago. Three different study groups, representing the public (1), organized medicine (2), and the government (3), concluded that specialty maldistribution was a contributing factor and recommended increasing the number of physicians to deliver primary care.

In 1969 the American Board of Family Practice (ABFP) was established. Fifteen family practice residency programs were accredited in that first year. The number of programs was 382 in 1980. The number of first-year positions has grown from fewer than 50 to more than 2,500, according to unpublished data from annual surveys of family practice residency programs conducted by the American Academy of Family Physicians (AAFP). This growth would not have been possible without federal and state funding. Numerous federal and state legislators believed that these newly trained specialists would provide cost effective, comprehensive personal health care and would practice in geographic areas of need. Federal appropriations grew from $5 million in fiscal 1972 under the Health Manpower Training Act of 1971 to $50 million in fiscal 1980 under the Health Professions Educational Assistance Act. State appropriations have likewise increased year by year as individual states have made large commitments to

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the training of family physicians. Some states have based future appropriations to residencies upon the willingness of graduates to practice in locations with physician manpower shortages.

Method

In 1979 the American Academy of Family Physicians initiated a study of all graduates of family practice residencies for the purpose of tracking these physicians between the time of graduation and the current practice location. Since the names and addresses of all graduates of family practice residencies were not available, the study was limited to include only graduates of family practice residency programs between 1970 and 1978 who were diplomates of the ABFP. The survey was mailed in the summer of 1979 to this target population of 4,295 physicians based in the United States; 3,302 physicians returned the questionnaires for an effective response rate of 76.9 percent. By census region, response rates varied from 83.5 percent for the Mountain region to 71.1 percent for the Middle Atlantic states.

Of the 3,302 physicians responding, there were 281 physicians whose current practice was limited to emergency medicine, military assignment, or public health service or who were in further training in family practice or another medical specialty, part-time practice only, or no current practice activity. Because the practices of these 281 physicians differed markedly from the practices of the remaining 3,021 respondents, they were excluded from the study.

Demographic, medical education, and practice characteristics as well as hospital admission/practice privileges of the respondents are available in an earlier publication reporting results of this study (4).

Results

The distribution of these graduates compared with the distribution of the U.S. population was skewed toward the nonmetropolitan areas. While the U.S. population was distributed as 73.3 percent in a Standard Metropolitan Statistical Area (SMSA)* and 26.7 percent in a non-SMSA according to 1977 data, the respondents in this study were distributed as 59.6 percent in a SMSA and 37.4 percent in a non-SMSA (Table 1).

Comparisons of the percentage of respondents in each region practicing in nonmetropolitan areas reveal marked differences; however, when reviewed in relationship to the percentage of the population in each region living in nonmetropolitan areas, the differences are easily understood. Two regions are worthy of note: while 13.7 percent of the general population in the Pacific division live in a rural area, 27.0 percent of the respondents practice there; while 39.5 percent of the general population in the Mountain division live in a rural area, 51.6 percent of the respondents practice there. (Comparisons of SMSA and non-SMSA areas in the New England census division are inappropriate as respondents were placed in their county of practice whereas SMSA designations in New England are based upon towns and cities as the primary unit.)

REGIONAL COMPARISONS

The comparisons of region of medical school, region of family practice residency program, and region of current practice of the respondents as of 1979 provide some insights into how the graduates moved through their training and into practice (Table 2). However, analysis of any apparent shifts in the population under study should be tempered by two caveats.

Comparing the number of graduates

* An SMSA is defined in general as having either (*a*) one city of 50,000 or more inhabitants or (*b*) one city with at least 25,000 inhabitants, which, when combined with contiguous places having a density of 1,000 or more people per square mile, will have a population of at least 50,000.

TABLE 1

Distribution of 1970–1978 Family Practice Residency Graduates by Region and Location of 1979 Practice in a SMSA or Non-SMSA

Region of Practice	Total		Location of Practice						Percentage of U.S. Population in Non-SMSA (July 1977)†
			SMSA		Non-SMSA		Not Reported		
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	
New England*	136	100.0	54	39.7	82	60.3	0	0.0	18.0
Middle Atlantic	336	100.0	264	78.6	69	20.5	3	0.9	13.4
East North Central	534	100.0	335	62.7	173	32.4	26	4.9	23.2
West North Central	394	100.0	162	41.1	219	55.6	13	3.3	48.5
South Atlantic	509	100.0	314	61.7	181	35.6	14	2.8	34.0
East South Central	123	100.0	61	49.6	60	48.8	2	1.6	48.0
West South Central	216	100.0	131	60.6	75	34.7	10	4.6	30.6
Mountain	248	100.0	114	46.0	128	51.6	6	2.4	39.5
Pacific	525	100.0	365	69.5	142	27.0	18	3.4	13.7
Total	3,021	100.0	1,800	59.6	1,129	37.4	92	3.0	26.7

* Care should be used in comparing SMSA versus non-SMSA in New England, since SMSAs are defined using the town as the primary unit rather than the county.

† *Estimates of the Population of Counties and Metropolitan Areas: July 1, 1976 and 1977.* Current Population Reports, Series P-25, No. 810. Washington, D.C.: U.S. Government Printing Office, 1979.

from medical schools in one region with the number of graduates from another region is not possible since the number of medical schools in each region (and thus the number of graduates) vary greatly. This same premise applies to making comparisons among regions with respect to the number of graduates of family practice residency programs produced by each region.

The second caveat that should be considered when viewing these data pertains to the retention rate for each region. In Table 2 no attempt has been made to show which graduates stayed in a region for part of or all of their years in medical education; that is, the 95 respondents who graduated from medical school in the New England census region are not necessarily some of the same 69 respondents who graduated from residency programs in New England.

The data in Table 2, however, prove very useful in examining the shifting patterns of location as respondents move into practice. In two census regions, the Middle Atlantic and the West North Central regions, more family physicians were trained in the regions than were staying in the respective regions to practice.

In the Middle Atlantic census region there was a 42.4 percent decrease in the number of respondents practicing in the region compared with the number who graduated from a medical school there and a 26.5 percent decrease in the number of respondents who practice in the region compared with the number who completed a family practice residency in that region. Similar statistics are reported for the West North Central region, where there was a 26.9 percent decrease in the number practicing in the region compared with the number who attended medical school in the region and a 10.9 percent decrease compared with the number who completed a family practice residency program there.

Three regions showed remarkable increases in the number of newly trained family physicians compared with the number who actually trained in those regions. In the Mountain region there was a 134.0 percent increase in the number of respondents practicing in the region compared with the number who went to medical school in the region and a 66.4 percent

TABLE 2

Distribution of 1970–1978 Family Practice Residency Graduates by Region of Medical School, Family Practice Residency Program, and 1979 Practice

Region	Region of Medical School	Region of Residency Program	Region of Practice	Percentage Change, Region of Medical School to Region of Practice	Percentage Change, Region of Residency to Region of Practice
New England	95	69	136	+43.2	+97.0
Middle Atlantic	583	457	336	−42.4	−26.5
East North Central	405	554	534	+31.9	−3.6
West North Central	539	442	394	−26.9	−10.9
South Atlantic	442	584	509	+15.2	−12.8
East South Central	154	87	123	−20.1	+41.4
West South Central	222	193	216	−2.7	+11.9
Mountain	106	149	248	+134.0	+66.4
Pacific	279	474	525	+88.2	+10.8
Foreign or not reported	196	12			

increase compared with the number who completed a family practice residency in the region. Similar statements can be made about the respondents in the Pacific and New England regions. In the Pacific region, there was an 88.2 percent increase in comparing region of current practice with region of medical school and a 10.8 percent increase in comparing region of current practice with region of residency program. In the New England region, there was a 43.2 percent increase in comparing region of current practice with region of medical school and a 97.0 percent increase in comparing region of current practice with region of residency program.

Perhaps the percentage declines in two regions and the percentage increases of two of the three regions mentioned above can be explained by the overall population changes in the United States. The Middle Atlantic and West North Central census regions, which experienced declines in comparing regions of practices with region of medical education, experienced two of the lowest rates of population growth among all census divisions between 1970 and 1979 (−1.5 percent and 4.4 percent respectively), according to U.S. Census Bureau statistics. The Mountain and Pacific census regions, however, which experienced increases in comparing region of practice with region of medical education, experienced two of the highest rates of population growth between 1970 and 1979 (27.5 percent and 13.4 percent respectively). Thus, it would appear that graduates located their practices in a manner correlated with the shifts in general population, as they search for areas or population centers that will support a practice. The generalization is not an absolute, though, as the New England census division experienced only a modest 3.3 percent population increase between 1970 and 1979.

STATE COMPARISONS

Comparisons of regions of current practice, residency program, or medical school are not as important to state or local governments as are the comparisons of the states of current practice, residency program, or medical school (Figure 1). A comparison of state of residency program and state of medical school shows that 52.6 percent of the respondents changed states between undergraduate and graduate medical education, 40.7 percent took their graduate medical education in the same state as their undergraduate medical education, and 6.4 percent attended a foreign medical school.

The number of respondents practicing in the same state in which they graduated from medical school was almost equal to

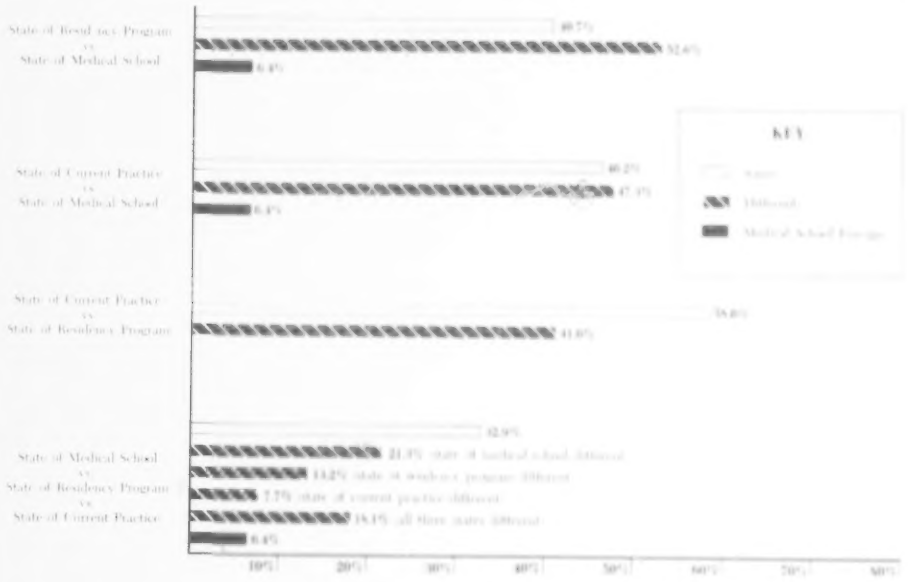

FIGURE 1
Comparisons of states of medical school, family practice residency program, and current (1979) practice of 1970–1978 family practice residency graduates.

the number not practicing in the same state (46.2 percent and 47.3 percent respectively). These data are consistent with data from other studies that have shown a decreasing trend for physicians to practice in the same state as the state of their undergraduate medical education (5, 6).

Respondents who graduated from publicly funded medical schools were more likely to practice in the states of their medical schools than were respondents who graduated from private schools. Of the 2,077 respondents who graduated from a publicly funded medical school, 57.3 percent practiced in the same state as the state of the medical school; of the 689 who graduated from a private medical school, 27.1 percent practiced in the same state as the state of the medical school. This trend has been noted in other studies as well (7).

In comparing state of practice with state of residency training, it is shown in Figure 1 that 58.6 percent of the respondents practiced in the same state in which they completed a residency program and 41.0 percent did not. Individual state statistics were not examined, because it was not possible to determine the effects of non-response upon these percentages. However, some state studies have been performed which can provide these data (8, 9).

A comparison of the states of all three contacts of the respondents to the survey indicates that one in three respondents (32.9 percent) practiced in the same state in which he took both undergraduate and graduate medical education. One in five (21.3 percent) practiced in the same state as his graduate medical education, although undergraduate medical education was taken in another state. One in 10 respondents (13.2 percent) practiced in the same state as the state of undergraduate medical education, although the state of graduate medical education was different. Only 7.7 percent of the respondents prac-

ticed in a state different from the state of graduate and undergraduate medical education, both of which were in the same state, and 18.1 percent had all three states of contact different.

PRACTICE AND RESIDENCY

Several authors have suggested that most residents tend to select a practice site within 100 miles of the community in which the residency is located (8, 10). Based upon this generalization, funding for several family practice residencies and satellites have been provided for communities with the purpose of placing graduates within a close radius of that community.

In the present study, however, the authors found that 52.3 percent of the respondents practiced outside a 100-mile radius from the residency program from which they graduated and 47.6 percent practiced within a 100-mile radius. (The reader is cautioned that these percentages are based on national statistics and should not be interpreted as state results.) Before these statistics form the basis of a new generalization, there are two factors which should be examined.

The statement that 52.3 percent of the respondents practiced outside a 100-mile radius from the residency program is understandable when viewed in the context of how many respondents practiced in a state different from the state of their residency program. As previously indicated 41.0 percent of the respondents, or 1,238 physicians, practiced in a state different from the state in which they completed a family practice residency. Of these 1,238 respondents, 93.8 percent reported that not only were they practicing in a different state from the state of their residency but also they were practicing more than 100 miles from that residency. Only 6.1 percent of these respondents, or 75 respondents, reported that they were practicing in a different state from the state of their residency but still within a 100-mile radius of their residency. Of the 1,769 respondents (58.6 percent) who were practicing in the same state as the state of their residency, 76.8 percent practiced within a 100-mile radius of their residency and 23.0 percent practiced outside the 100-mile radius.

It is also important to understand that most family practice residency programs are located in metropolitan areas because of the resources these areas provide to the residencies; 88.4 percent of the residencies in 1979 were located in an SMSA. Of the 1,129 respondents practicing in a non-SMSA, 72.5 percent were practicing more than 100 miles from the residency program. Of the 1,800 respondents practicing in SMSAs, 60.2 percent practiced within 100 miles of their residencies. Thus, because most residencies are located in urban settings, respondents who wish to practice in rural settings probably move more than 100 miles from their residencies to find a rural setting, whereas most residents who remain within an urban setting practice within a 100-mile radius from their residency.

COMMUNITY SIZES

In order to compare the size of the community of practice with the physician's hometown, a detailed, subjective listing of categories was used for community size. The findings, supported by other studies on physician practice location (11, 12), indicate that family physicians tend to practice in communities related to their background (Table 3). Physicians from a rural background were twice as likely to practice in a rural area than were physicians from nonrural backgrounds. Physicians from a large metropolitan background were three times as likely to practice in a large metropolitan area than were physicians from another background. The plurality of physicians from each back-

TABLE 3

Distribution of 1970–1978 Family Practice Residency Graduates by Size of Home Community* and Size of 1979 Practice Location

Character/Population of Home Community	No.	Percentage Practicing in				
		Rural	Small Town	Large City	Small Metropolitan Area	Large Metropolitan Area
Rural (<2,500)	547	20.1	43.3	16.5	11.7	8.4
Small town (2,500–25,000)	846	6.7	57.0	13.4	11.1	11.8
Large city (25,000–100,000)	404	6.2	29.0	36.6	13.9	14.4
Small metropolitan area (100,000–500,000)	383	7.3	29.8	16.4	35.5	11.0
Large metropolitan area (>500,000)	824	10.4	31.3	13.5	11.8	33.0
Total	3,004†	10.2	40.2	17.5	14.9	17.2

* Size of community in which physician spent school years prior to graduation from high school.
† There were 17 respondents who did not reply to the questions.

ground practiced in a community similar to their background. The most popular practice sites of respondents (40.2 percent) were in towns with populations of 2,500 to 25,000.

Discussion and Conclusions

The results of this study are not directly comparable with other studies on physician mobility. Most studies on physician mobility follow a cohort 15 years after graduation from medical school. This study not only combined all physicians who completed a family practice residency between 1970 and 1978 into one group but also examined current practice location for many physicians only seven years out of medical school. Because family practice residents have graduated in significant numbers only recently, a mobility study of family practice residents comparable with other physician mobility studies cannot yet be performed.

The data reported here do provide some indication of how respondents have moved through their medical education and into practice. The results of this study are:

1. More than one in three respondents was practicing in a non-SMSA.

2. In the Middle Atlantic and West North Central census regions, there was a marked decrease in the number of respondents who practiced in both regions compared with the number who graduated from medical school or from a family practice residency in their respective regions. In the Mountain, Pacific, and New England census divisions, there was a marked increase in the number of respondents who practiced in each of the regions compared with the number of respondents who graduated from medical school or a family practice residency in their respective regions. The movement of the respondents to their eventual practice locations is somewhat comparable with the mobility patterns of the U.S. population for four of the five census regions during the last decade.

3. The more contact a physician has with a state, the more likely he is to practice within that state. Points of contact examined in this study include state of medical education and state of family practice residency program, with the latter contact having a greater influence.

4. The majority of respondents practiced more than 100 miles from their residency program. This statistic is understandable when viewed in the context of the number of respondents who were prac-

ticing in a state different from the state of their family practice residency program (41.0 percent) and thus moved more than 100 miles from their residency program.

5. Most respondents practicing in a non-SMSA had moved outside a 100-mile radius from their family practice residency programs. Most respondents practicing in an SMSA were practicing within the 100-mile radius of their residency programs.

6. Physicians were likely to be practicing in a community similar to their backgrounds, that is, where they spent their years prior to high school.

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DATAGRAM

Analysis of University-Owned Teaching Hospitals' Income

The Department of Teaching Hospitals of the Association of American Medical Colleges (AAMC) has for the past decade conducted an annual survey of financial and general operating data for the university-owned members of the Council of Teaching Hospitals (COTH). In April 1980 questionnaires for the survey of fiscal 1979 data were mailed to 63 hospitals. By December a 100-percent response rate was achieved for the second consecutive year. The fiscal 1979 survey questions were selected to enhance continuity and comparability with previous survey years; data pertaining to operating income are reported on an accrual basis.

Hospitals Receiving State Funds

Forty-four (nearly 70 percent) of the teaching hospitals reported state appropriations as a source of operating revenue during fiscal 1979. This was three more hospitals than the number reporting such appropriations in the previous survey year. State funds to the 44 hospitals totaled $483.6 million, or 17.1 percent of the hospitals' total operating incomes (Table 1). This percentage continues to show a "leveling off" that has been occurring over the last three survey years. The fiscal 1977 and 1978 percentages were 17.3 and 17.6 respectively. Prior to this period, the state portion, which had been the largest source of operating income for these hospitals, was shrinking significantly each year (from 27.8 percent in fiscal 1971 to 19.2 percent in fiscal 1976). At the same time, Medicare's portion of the total operating incomes of recipients of state funds continually grew (from 11.4 percent in fiscal 1971 to a high of 21.7 percent in fiscal 1979) and assumed the position as leading source of income in fiscal 1976 (and has held it since). Among those sources whose contribution to total operating income diminished during fiscal 1979 were commercial insurance, self-pay patients, and additional welfare payments. These decreases were offset by increased operating income from Blue Cross, Medicare, Medicaid, and "other" income (that is, income from workman's compensation, overhead from sponsored programs, government contracts for patient care, and miscellaneous sources).

The actual dollar amounts of individual state appropriations in fiscal 1979 ranged from $1.1 million to $39.8 million. As shown in Table 2, 26 (59 percent) of the 44 institutions relied on state appropriations for between 1 to 20 percent of their total operating incomes; 13 (30 percent)

TABLE 1

Sources of Income of University-Owned Teaching Hospitals Receiving State Appropriations (In thousands of dollars)

Income Source	Fiscal 1979 (N = 44)		Fiscal 1978 (N = 41)		Fiscal 1977 (N = 41)	
	Amount	Percent	Amount	Percent	Amount	Percent
State appropriations	483,632	17.1	412,179	17.6	342,651	17.3
Blue Cross	385,429	13.6	308,761	13.2	278,141	14.1
Commercial insurance	470,284	16.7	396,610	17.0	357,760	18.1
Self-pay	176,854	6.3	180,467	7.7	122,850	6.2
Medicare	611,283	21.7	487,256	20.9	399,347	20.2
Medicaid	427,423	15.2	347,417	14.9	276,579	14.0
County appropriations	25,399	.9	19,465	.8	14,938	.8
City appropriations	4,175	.1	6,928	.3	12,663	.6
Additional welfare payments	20,161	.7	27,250	1.2	19,335	1.0
Other	215,783	7.7	149,656	6.4	152,511	7.7
Total	2,820,423	100.0	2,335,989	100.0	1,976,775	100.0

of these hospitals received 21 to 40 percent of their incomes from state funds; and the remaining five state-supported hospitals received 41 to 60 percent of their incomes from this source. Three hospitals were in this latter category in fiscal 1978. The mean state appropriation among the 44 respondents was $11.0 million in fiscal 1979, compared with $10.1 million in fiscal 1978. The mean total operating income of these teaching hospitals in fiscal 1979 was $64.2 million, up from $57.0 million in fiscal 1978. Clearly, the rate of increase (17.3 percent) in total state appropriated dollars did not keep pace with the rate of dollar growth (20.7 percent) in the total operating income of these state-supported hospitals.

Hospitals Not Receiving State Funds

Table 3 presents aggregate data on the sources of income for the university-owned teaching hospitals that indicated they were not recipients of state appropriations in fiscal years 1977–1979. In fiscal 1979, 19 respondents were in this category. As with their state-assisted counterparts, these hospitals also received the largest portion (27.0 percent) of their operating incomes from Medicare (up 1.1 percentage points

TABLE 2

Distribution of State-Funded Teaching Hospitals by Proportion of Total Operating Income Received from State Appropriations, 1970 Through 1979*

Year	Percentage Total Operating Income from State Appropriations			
	1–20 percent	21–40 percent	41–60 percent	61–100 percent
1979 (N = 44)	26	13	5	—
1978 (N = 41)	25	13	3	—
1977 (N = 41)	25	13	2	1
1976 (N = 40)	24	13	3	—
1975 (N = 38)	19	13	6	—
1974 (N = 30)	13	12	5	—
1973 (N = 28)	13	9	6	—
1972 (N = 34)	12	12	9	1
1971 (N = 34)	11	15	5	3†
1970 (N = 30)	12	8	10	—

* Reported on a cash basis from 1970 to 1973 and on an accrual basis thereafter.

† One hospital in its first year of operation received 100 percent of its operating income from state appropriations.

TABLE 3

Sources of Income of University-Owned Teaching Hospitals Not Receiving State Appropriations (In thousands of dollars)

Income Source	Fiscal 1979 (N = 19)		Fiscal 1978 (N = 22)		Fiscal 1977 (N = 21)	
	Amount	Percent	Amount	Percent	Amount	Percent
Blue Cross	297,380	18.9	329,509	21.2	291,950	22.8
Commercial insurance	232,864	14.8	261,081	16.8	209,354	16.4
Self-pay	189,388	12.1	190,654	12.3	159,557	12.5
Medicare	424,820	27.0	401,744	25.9	334,245	26.1
Medicaid	270,534	17.2	268,464	17.3	215,460	16.8
County appropriations	557	<.1	507	<.1	164	<.1
City appropriations	222	<.1	131	<.1	135	<.1
Additional welfare payments	7,556	.5	10,457	.7	6,476	.5
Other	147,441	9.4	87,801	5.6	61,847	4.8
Total	1,570,762	100.0	1,550,348	100.0	1,279,188	100.0

TABLE 4

Sources of Income by Type of Care in University-Owned Teaching Hospitals*
(In thousands of dollars)

Income Source	Fiscal 1979 (N = 58)				Fiscal 1978 (N = 58)			
	Outpatient		Inpatient		Outpatient		Inpatient	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Blue Cross	54,593	10.6	621,168	19.2	57,724	12.8	574,578	20.3
Commercial insurance	74,088	14.4	587,156	18.1	61,319	13.6	521,375	18.4
Self-pay	116,769	22.8	243,268	7.5	108,604	24.0	272,057	8.9
Medicare	91,562	17.9	929,361	28.7	77,146	17.1	785,921	27.7
Medicaid	95,942	18.7	581,359	17.9	79,353	17.6	510,483	18.0
State appropriations	24,072	4.7	67,151	2.1	21,827	4.8	64,301	2.3
County appropriations	1,395	.3	5,159	.2	838	.2	5,384	.2
City appropriations	3,300	.6	160	<.1	7,056	1.6	0	0
Additional welfare payments	3,168	.6	23,009	.7	6,077	1.3	31,630	1.1
Other	47,993	9.4	181,834	5.6	31,818	7.0	89,717	3.1
Total	512,882	100.0	3,239,625	100.0	451,762	100.0	2,835,446	100.0

* Data reported only for those hospitals able to separate income into inpatient and outpatient categories.

from the previous fiscal year). The only other source of income to experience an increase over its fiscal 1978 contribution to total operating income was the "other" category, which at 9.4 percent of total income was 3.8 percentage points higher than its fiscal 1978 portion. The increased revenue from Medicare and the "other" income category offset decreases from Blue Cross (down 2.3 percentage points) and commercial insurance (down 2.0 percentage points). The mean total operating income in fiscal 1979 for university-owned teaching hospitals that did not receive state funds was $82.7 million, up 17.3 percent from the previous fiscal year's figure of $70.5 million.

Sources of Income By Type of Care

Table 4 compares the fiscal 1978 and 1979 sources of income for the 58 survey respondents that reported revenue data on both inpatient and outpatient bases. On the outpatient side, "self-pay" revenue again provided the highest percentage (22.8 percent) to total operating income in fiscal 1979 despite slipping 1.2 percentage points from its fiscal 1978 portion. The percentage outpatient contribution from Medicaid (18.7 percent) was next highest, with Medicare third (17.9 percent). Year-to-year reductions in outpatient revenue from self-pay patients, Blue Cross (down 2.2 percentage points), city appropriations, and additional welfare payments were offset by increased revenue from Medicaid and Medicare, as well as from commercial insurance and "other" income (up 2.4 percentage points).

On the inpatient side, Medicare was the leading source of revenue again at 28.7 percent of aggregate inpatient income for the 58 teaching hospitals in fiscal 1979. Repeating as second and third leading sources were Blue Cross at 19.2 percent and commercial insurance at 18.1 percent, with Medicaid close behind at 17.9 percent. Increased percentage contributions from Medicare and "other" income (up 2.5 percentage points) offset varying decreases in the inpatient share from all other sources of revenue between fiscal 1978 and 1979.

The mean outpatient income for the 58 repondents in fiscal 1979 was $8.8 million, up an average of $1 million from the previous fiscal year. The mean inpatient income for these institutions was $55.9 million in fiscal 1979, an average increase of $7 million over the fiscal 1978 mean operating income.

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